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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,762	08/31/2001	Takeshi Kamata	q66058	9200

7590

08/29/2003

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EXAMINER

MCHENRY, KÉVIN L

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 08/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-12

Office Action Summary

Applicati n N .

09/942,762

Applicant(s)

KAMATA, TAKESHI

Examiner

Kevin L McHenry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 is/are allowed.
- 6) ☒ Claim(s) 2 and 5-8 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 18 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 61017351 in view of Kornmann et al. (U.S.P. 4,169,426).

JP 61017351 teaches a composite wire manufacturing process in which a wire is continuously pretreated to remove stains and oxide by a reservoir that is provided in the vicinity of an inlet seal to a molten metal infiltrating chamber. The wire is drawn upward from the top of the pretreating area through an inlet seal into a molten metal bath container that is pressurized and exits through an outlet seal that is provided in a top part of the bath container (see JP 61017351; particularly abstract and Figure).

JP 61017351 does not teach the use of a flux reservoir to continuously coat the wire before infiltration.

Kornmann et al. teach a continuous wire infiltration method in which a pretreatment system is used to clean the wire before infiltration. This pretreatment includes cleaning and fluxing the wire to provide good wetting and adherence to the wire by the melt during infiltration (see U.S.P. 4,169,426; particularly Figure 1; column 2, lines 3-31, 51-68; column 3, lines 62; column 6, lines 50-64).

It would have been obvious to one of ordinary skill in the art at the time that the applicant's invention was made to have modified the process of JP 61017351 by the

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teachings of Kornmann et al. One would have been motivated to do so in order to use a wire pretreatment that included flux to provide good wetting and adherence to the wire by the melt during infiltration, as Kornmann et al. teach.

The examiner notes that JP 61-017351 teaches that the flux reservoir is in the vicinity of the inlet to the metal bath container. The examiner also notes that the language used by the applicant to describe the location of the flux reservoir relative to the metal bath container, that the reservoir is "immediately prior to" the inlet of the bath container, is relatively broad and that the flux reservoir and bath container taught by JP 61-017351 read upon the reservoir and container claimed by the applicant when these limitations are considered in their broadest sense. The applicant has not provided further limitations or definitions to further define "immediately prior to" over the prior art.

It would have been obvious to one of ordinary skill in the art to have constructed the flux reservoir so that its top or side connected to the inlet of the bath container as a matter of design choice. While JP 61-017351 shows that the top of the pretreating area is connected to the inlet, one of ordinary skill may have designed the flux reservoir so that its side connected to the inlet so that the reservoir was not directly underneath of the bath container. Such a placement would help prevent the contamination of the flux reservoir by metal from the bath if there was a leak from the bottom inlet of the bath container. By placing the flux reservoir to the side of the container the metal would not leak into the reservoir. Also, by placing the flux reservoir to the side, maintenance of the inlet to bath container and maintenance of the flux reservoir would be facilitated since the two units would be separated by a greater distance, giving more room for

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maintenance personnel to work in. A flux reservoir that has wire passing through its side is demonstrated by Kornmann et al.

The examiner notes that the limitations of claim 6 regarding carbon fiber and type of flux for the infiltration apparatus are intended uses of the apparatus and do not further limit the structure of the apparatus. The apparatus taught by the rejection above would be capable of such an intended use.

Allowable Subject Matter

3. Claim 1 is allowed.
4. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest a molten metal infiltrating method for infiltrating a linear carbon fiber material that has been previously coated with a lithium chloride or sodium chloride flux.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Response to Arguments

7. Applicant's arguments filed 18 March 2003 have been fully considered but they are not persuasive.

As noted above, the applicant's limitation of placing the flux reservoir immediately prior to the bath container is relatively broad and the prior art, particularly the teachings of JP 61-017351, read upon this limitation in its broadest sense. Furthermore, the applicant has not provided any advantage for having the flux reservoir immediately prior to the inlet for the bath container. The examiner notes that the disclosure of the applicant discusses the importance of treating a matter to be infiltrated with flux prior to immersion in the bath, but does not discuss any importance for placement of the flux reservoir relative to the bath container. The inventive step of the applicant seems to lie within the pretreatment of the work material with a flux prior to infiltration rather than the placement of the pretreating means.

The examiner notes that the limitations of claim 6 currently regard intended use for the infiltration apparatus cited in claim 5. However, the applicant is encouraged to amend claim 6 so that a source for carbon fiber and sources for lithium chloride or

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sodium chloride are provided so that the structure of the apparatus is further limited by the claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin L McHenry whose telephone number is (703) 305-9626. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G Dunn can be reached on (703) 308-3318. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Kevin McHenry



EXANDRA ELVE
PRIMARY EXAMINER